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PATENT APPLICATION
Serial No. 10/010,944
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group Art Unit 3727

In re application of

Ad EMMERZAAL

CONTAINER TAB

Serial No. 10/010,944

Filed November 8, 2001

Pittsburgh, Pennsylvania
May 8, 2002

CLAIM FOR PRIORITY UNDER 35 U.S.C. §119

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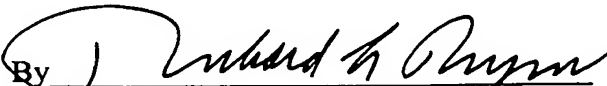
Sir:

Attached hereto is a certified copy of European Patent Application No. 00.203965.9, which corresponds to the above-identified United States application and which was filed in the European Patent Office on November 10, 2000.

The priority benefits provided by Section 119 of the Patent Act of 1952 are claimed for this application.

Respectfully submitted,

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Beschreibung

Certificate

Attestation

Die angehefteten Unterlagen stimmen mit der ursprünglich eingereichten Fassung der auf dem nächsten Blatt bezeichneten europäischen Patentanmeldung überein.

The attached documents are exact copies of the European patent application described on the following page, as originally filed.

Les documents fixés à cette attestation sont conformes à la version initialement déposée de la demande de brevet européen spécifiée à la page suivante.

Patentanmeldung Nr. Patent application No. Demande de brevet n°

00203965.9

Der Präsident des Europäischen Patentamts;
Im Auftrag

For the President of the European Patent Office

Le Président de l'Office européen des brevets
p.o.

R C van Dijk

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Blatt 2 der Bescheinigung
Sheet 2 of the certificate
Page 2 de l'attestation

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Bezeichnung der Erfindung:
Title of the invention:
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Container tab

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Remarques:

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1. The present invention relates to a system of communication between a transmitter and a receiver. The system is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

2. The system of the present invention is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

3. The system of the present invention is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

4. The system of the present invention is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

5. The system of the present invention is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

6. The system of the present invention is designed to provide a means for transmitting and receiving signals in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second. The system is also capable of operating in a manner which is not subject to the usual limitations of frequency and bandwidth. The system is particularly adapted for use in the transmission of data and is capable of operating at a rate of up to 100,000 bits per second.

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CONTAINER TAB

The invention relates to a tab for a container, which container comprises a wall with a tear part for opening the container, such as containers with an easy opening end.

5 Conventional containers with a tear part have a tab for popping the tear part and subsequently tearing the tear part out of the wall of the container in which the tear part is arranged. The removal of the tear part leaves an opening, through which the contents of the
10 container can be accessed.

 The performance of a tab is currently measured with two values. The first value is the pop force. This pop force is the force necessary to press a tab end against the tear part, such that the tear part begins to
15 tear and the opening arises. The second force is the tear force. This tear force is the force necessary to tear the tear part fully out. Both the pop force and the tear force are currently fully optimized.

 However, users of containers with an easy
20 opening end still have trouble opening the container. It turns out that the initial force for lifting the tab of the surface of the container contributes considerable to the comfort of opening a container with an easy opening end. At present a tab is adjacent to the surface of the
25 container. It is therefore difficult to get a grip onto the tab in order to lift the tab and open the container. The force necessary to lift the tab from the surface is called the first lift force. In order to improve comfort of such a tab, the first lift force could be reduced, or
30 the access to the tab in order to grab it could be improved.

 It is an object of the present invention to provide a tab with improved comfort for opening a container.

This object is achieved by a tab according to the invention, which comprises:

- a rigid lever part, which is connectable to the tear part; and

5 - an operating part for operating the lever part; which operating part is movably connected to the lever part, such that the operating part can be moved out of the plane of the rigid lever part.

Because the operating part is movably connected to the lever part, such that the operating part can be moved out of the plane of the rigid lever part, it is possible to tilt part of the tab up, without already exerting the first lift force. When one has a firm grip onto the operating part, one can exert the necessary first lift force to lift the tab and subsequently to exert pop force to pop the tear part and subsequently exert a tear force in order to tear the tear part out of the wall of the container.

According to an embodiment of the invention the operating part is hingedly arranged to the lever part. Such an operating part can be folded up without any major effort, after which one can get a good grip on the operating part in order to pop and tear the tear part.

Preferably the lever part comprises a substantially sleeve-like edge, in which a cylindrical edge of the operating part is hingedly arranged. This has the advantage that during manufacturing the operating part can be snapped into the lever part.

In another embodiment of the invention the lever part comprises at least one opening, in which the operating part is arranged. A loop-like part can be arranged in said opening or for example a nail shaped part can be arranged in said opening.

Preferably the operating part has a tab shape. In another embodiment the operating part comprises a loop.

According to again another embodiment of the invention the operating part is flexible. Instead of

hingedly arranged, the operating part can be flexible, such that the operating part can be lifted without already popping the tear part.

Preferably the lever part comprises at least two sleeves, in which the ends of a strand are fixedly arranged. Hereby the strand forms a loop in which a finger can be placed and by which a tear force can easily be exerted. The strand comprises preferably a plastic. This plastic can be e.g. polypropylene or nylon 6.6.

In another embodiment the strand comprises a cable of metal, plastic etc. This cable provides the strength for enabling a sufficient tear force.

The invention also relates to a container, comprising:
- a bottom wall;
- a peripheral wall extending from the bottom wall;

- an upper closing wall, which comprises a tear part for opening the container; and
- a tab according to the invention, which is connected to the tear part.

These and other characteristics of the invention are further disclosed hereafter in combination with the attached drawings.

Figure 1A and 1B show in perspective view two embodiments of a container according to the invention.

Figure 2 shows in perspective view a second embodiment of a container according to the invention.

Figures 3-7 show embodiments of a tab according to the invention, in which the operating part is flexible.

Figures 8-13 show embodiments of a tab, in which the operating part is hingedly arranged to the lever part.

Figures 14-16 show embodiments of a tab, in which the operating part is snapped onto the lever part.

Figure 17 shows a preferred embodiment of a tab according to the invention.

Figure 1A shows a first embodiment 1 of a container according to the invention. This container is a so-called three part container, which has a peripheral wall 2, 4 with a corrugated part 3. Onto the upper wall 5 a tab 170 is arranged, which tab 170 will be discussed in relation to figure 17.

Figure 1B shows a second embodiment 10 of a container according to the invention. This container comprises a bottom wall 11, a peripheral wall 12 and an upper closing wall 13. Onto the upper closing wall 13 is a tab 14 arranged, which is shown in more detail in figure 3. This tab is arranged to said upper closing wall 13 with a rivet 15.

Figure 2 shows a third embodiment 20 of a container according to the invention. This embodiment 20 also comprises a bottom wall 21, a peripheral wall 22 and an upper closing wall 23. Onto the upper closing wall 23 a tab 24, which is shown in more detail in figure 7, is arranged with a rivet 25. In order to define the pop area of the tear part, which comprises the whole surface of the upper closing wall 23, a strengthening groove 26 is arranged into the upper closing wall 23.

Figure 3 shows a first embodiment 30 of a tab according to the invention. The tab 30 comprises a lever part 31 with two legs 32. These legs 32 comprise sleeve-like ends 33. In this embodiment, these sleeve-like parts are conical. The tab 30 further comprises an operating part, which comprises a strand 34, which has on each end a bushing 35, which is shifted over the sleeves 33. The lever part 31 is arranged with a rivet 36 to a tear part of a container. This rivet functions as a pivot for the levering action of the lever part 31. By pulling up the legs 32, the front part 37 of the lever part 31 will be pressed against the tear part and realizes the pop force for popping the tear part.

Figure 4 shows a second embodiment 40 of a tab according to the invention. Similar to the embodiment 30 this embodiment has also a lever part 41 with two legs 42

and an operating part 43. Onto the legs 42 are sleeve-like ends 44 arranged. These sleeve-like ends are conical and comprise a lip 45, which co-acts with an opening in the bushings 46 for securing the sleeve-like ends 44 into the bushings 46.

Figure 5 shows a third embodiment 50 of a tab according to the invention. In this embodiment the operating part 51 comprises a metal cable 52, which is coated with a plastic layer 53. The operating part 51 is clammed into sleeves 54 arranged onto the lever part 55.

Figure 6 shows a fourth embodiment 60 of a tab according to the invention. In this embodiment the operating part, which consists of a strand 61, has two thickenings 62 on both ends of the strand 61. These thickenings 62 prevent that the strand 61 can be pulled through the sleeves 63 of the lever part 64.

Figure 7 shows a fifth embodiment 70 of a tab according to the invention. In this embodiment an O-ring 71 is used as operating part. This O-ring 71 is clammed into three sleeve parts 72 of the lever part 73.

Figure 8 shows a sixth embodiment 80 of a tab according to the invention. This tab 80 comprises a tab-shaped operating part 81, which comprises two journals 82, which are hingedly arranged into sleeve-like ends 83 of the lever part 84.

Figure 9 shows a seventh embodiment 90 of a tab according to the invention. This tab 90 comprises a loop-like operating part 91 with a cylindrical edge 92. The lever part 93 comprises a sleeve-like edge 94 in which the cylindrical edge 92 can be shifted.

Figure 10 shows an eighth embodiment 100, which is similar to the seventh embodiment 90. The operating part 101 again comprises a cylindrical edge 102, which has on both ends two thickenings 103. This cylindrical edge 102 can be snapped into a halve open sleeve part 104 of the lever part 105. The thickenings 103 prevent that the operating part 101 is shifted out of the halve open sleeve 104. The thickenings 103 comprise a peripheral

ridge, which defines an angular end position of the operating part 101 relative to the lever part 105.

Figure 11 shows a ninth embodiment of a tab according to the invention. This embodiment 110 has also an O-ring 111, but is held in just one sleeve-like edge 112.

Figure 12 shows a tenth embodiment 120 of a tab according to the invention. This embodiment 120 comprises a lever part 121 with an opening 122. A loop-like ribbon 123 extends through the opening 122 of the lever part 121.

Figure 13 shows an eleventh embodiment of a tab 130 according to the invention, which comprises again a lever part 131 with an opening 132. A tab-like operating part 133 extends with one end through the opening 132 and is looped back and attached to itself with an attachment zone 134.

Figure 14 shows a twelfth embodiment 140 of a tab according to the invention. This embodiment 140 has a lever part 141 with an opening 142. The operating part 143 has an end with a slot 144, which can be shifted over the lever part 141. The slot 144 comprises also a container 145, which locks the operating part 143 onto the lever part 141.

Figure 15 shows a thirteenth embodiment 150 of a tab according to the invention. In this embodiment the lever part 151 is provided with two openings 152. The operating part 153 comprises two mushroom-like protrusions 154, which can be snapped into the openings 152.

Figure 16 shows a fourteenth embodiment 160 of a tab according to the invention. In this embodiment the lever part 161 is provided with three openings through which three protrusions 162 of the operating part 163 extend and are caulked.

Figure 17 shows a preferred embodiment of a tab 170 according to the invention. This tab comprises a lever part 171 and an operating part 172. The lever part

comprises two legs 173, which are connected to the operating part 172. The lever part comprises an opening 174, through which a rivet may extend in order to mount the tab onto a container. The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

The lever part 171 is made out of a piece of rigid material like metal, tin plate or aluminum. The operating part 172 can be made out of a plastic, and elastic strength.

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CLAIMS

1. Tab for a container comprising a wall with a tear part for opening the container, said tab comprising:

- a rigid lever part, which is connectable to the tear part; and

5 - an operating part for operating the lever part, which operating part is movably connected to the lever part, such that the operating part can be moved out of the plane of the rigid lever part.

10 2. Tab according to claim 1, wherein the operating part is hingedly arranged to the lever part.

3. Tab according to claim 2, wherein the lever part comprises a substantially sleeve-like edge, in which a cylindrical edge of the operating part is hingedly arranged.

15 4. Tab according to claim 2, wherein the lever part comprises at least one opening, in which the operating part is arranged.

5. Tab according to claim 2, 3 or 4, wherein the operating part has a tab shape.

20 6. Tab according to claim 2, 3 or 4, wherein the operating part comprises a loop.

7. Tab according to claim 1, wherein the operating part is flexible.

25 8. Tab according to claim 7, wherein the lever part comprises at least two sleeves, in which the ends of a strand are fixedly arranged.

9. Tab according to claim 8, wherein the strand comprises a plastic.

30 10. Tab according to claim 8 or 9, wherein the strand comprises a steel cable.

11. Container, comprising:

- a bottom wall;

- a peripheral wall extending from the bottom wall;

- an upper closing wall, which comprises a tear part for opening the container; and

5 - a tab according to any of the preceding claims, which is connected to the tear part.

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ABSTRACT

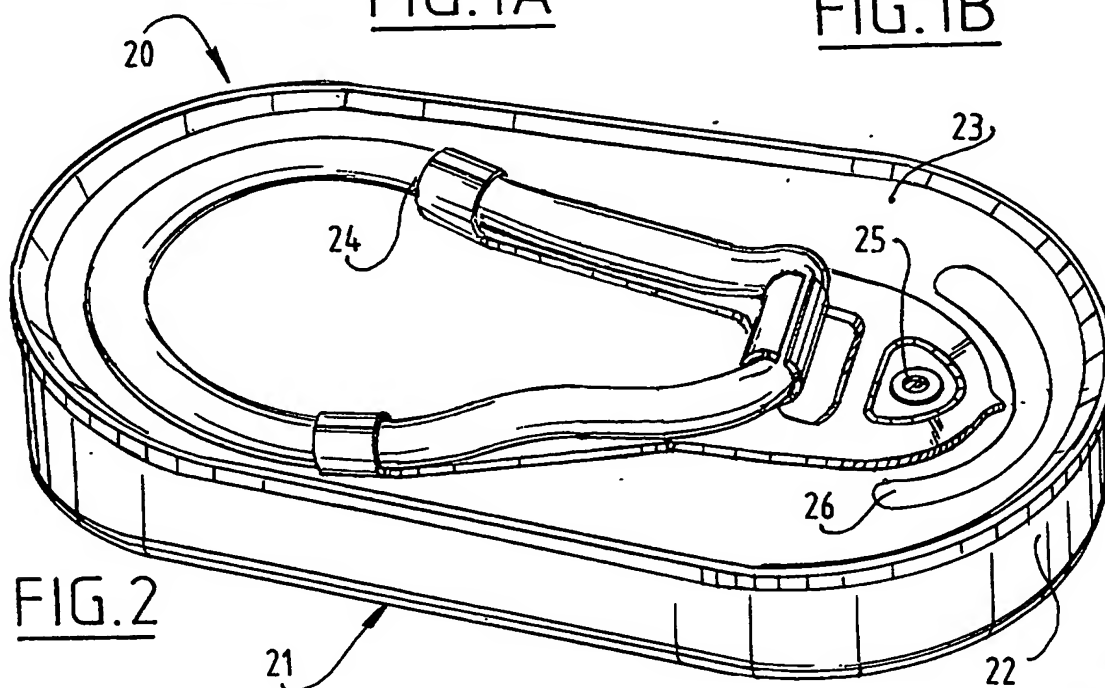
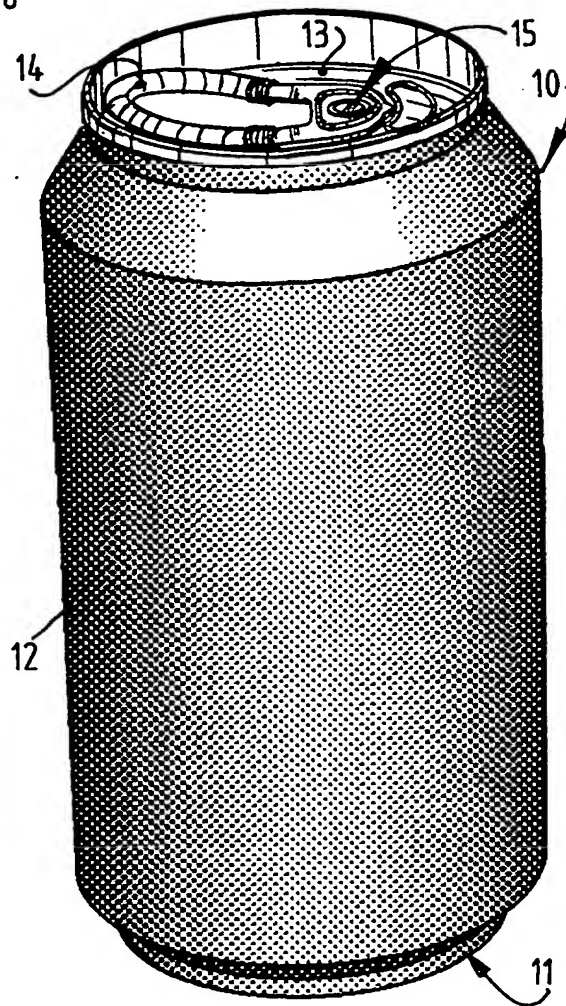
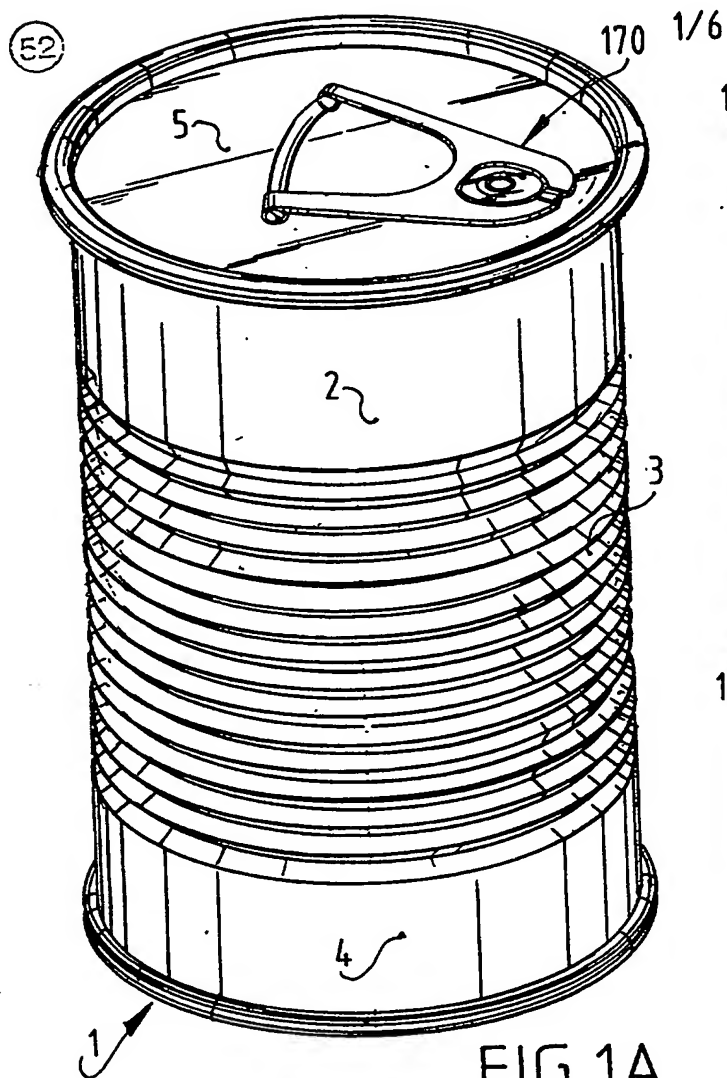
The invention relates to a tab for a container comprising a wall with a tear part for opening the container, said tab comprising:

- a rigid lever part, which is connectable to
- 5 the tear part; and
- an operating part for operating the lever part, which operating part is movably connected to the lever part, such that the operating part can be moved out of the plane of the rigid lever part.

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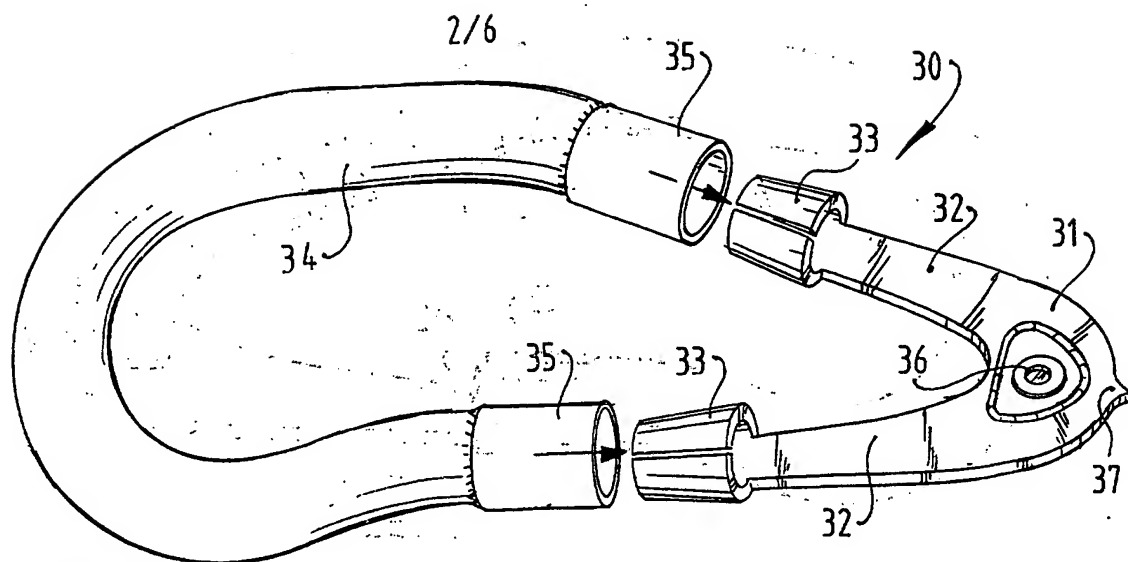


FIG. 3

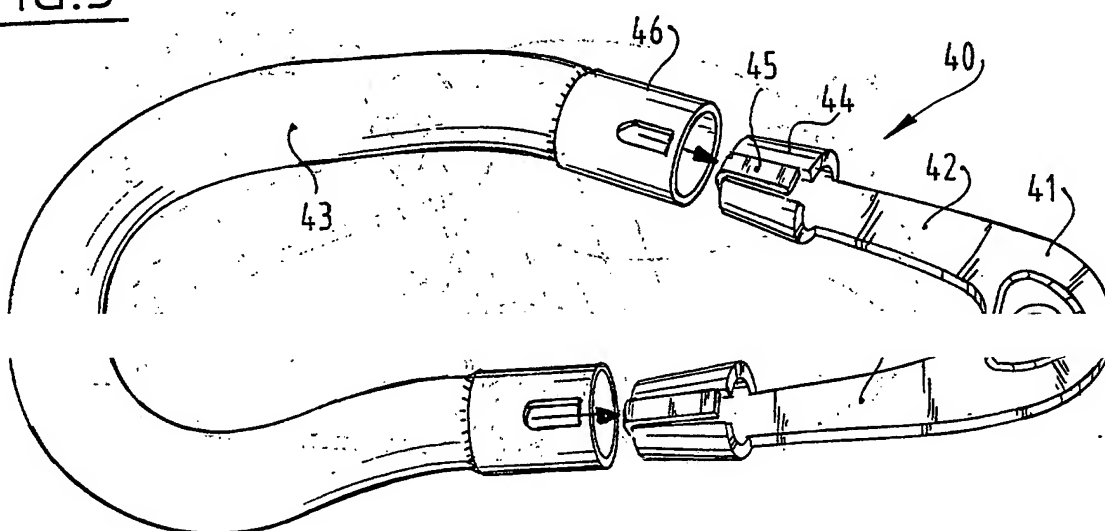


FIG. 4

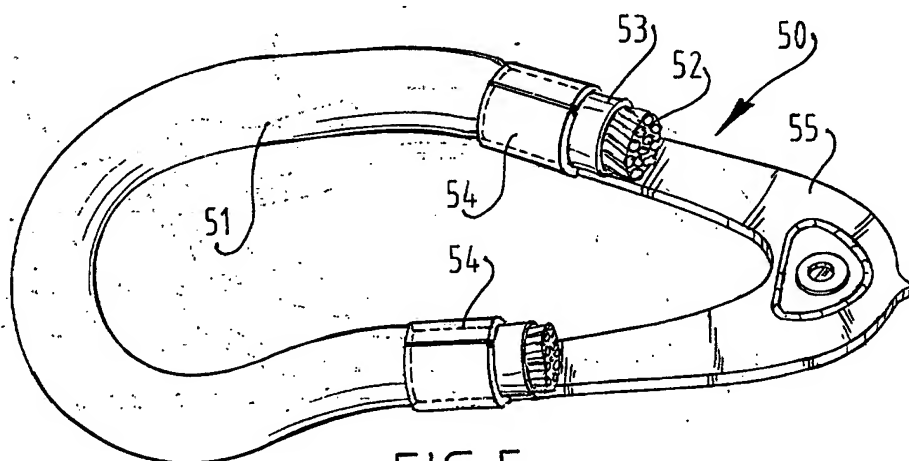


FIG. 5

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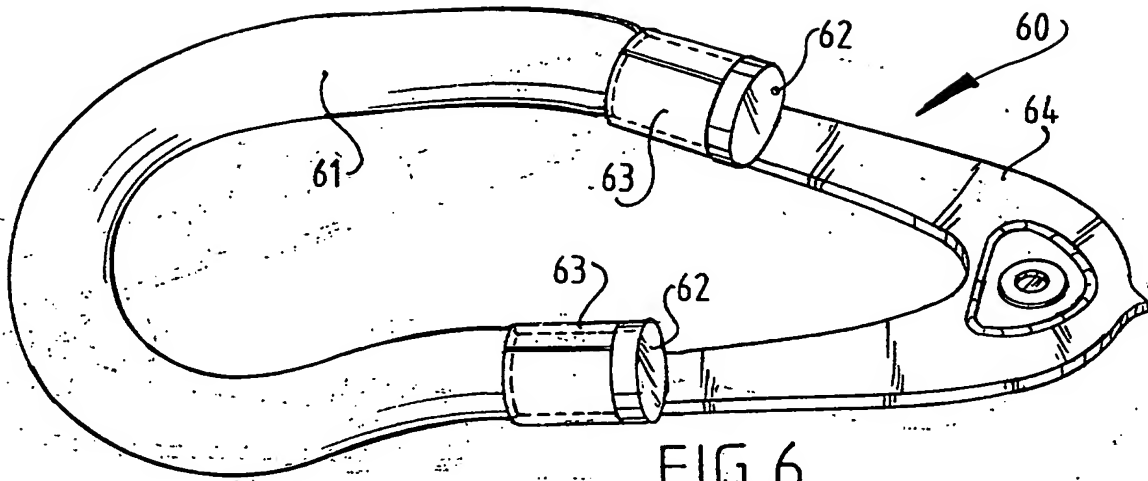


FIG. 6

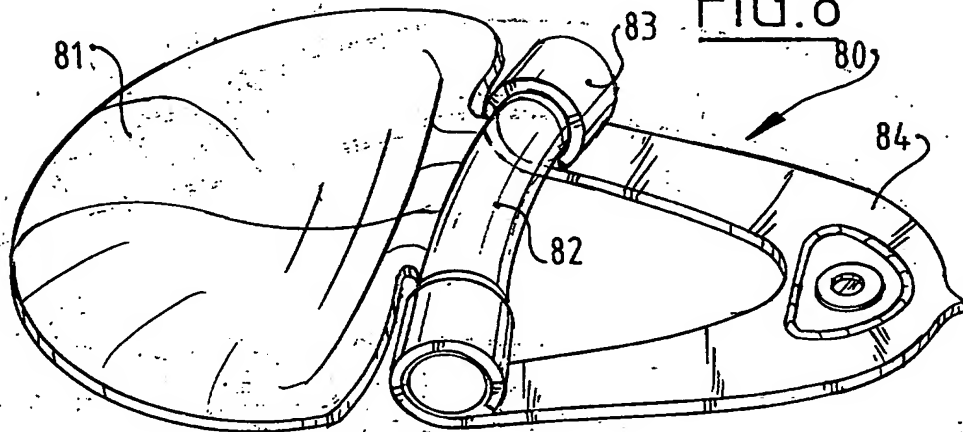


FIG. 8

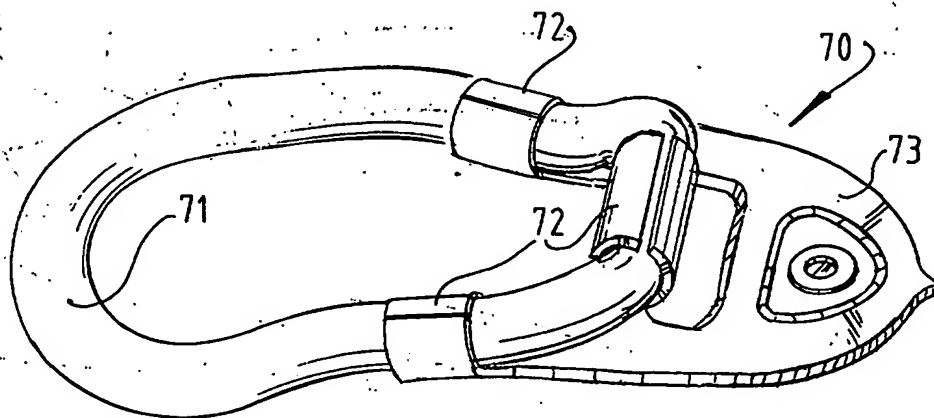
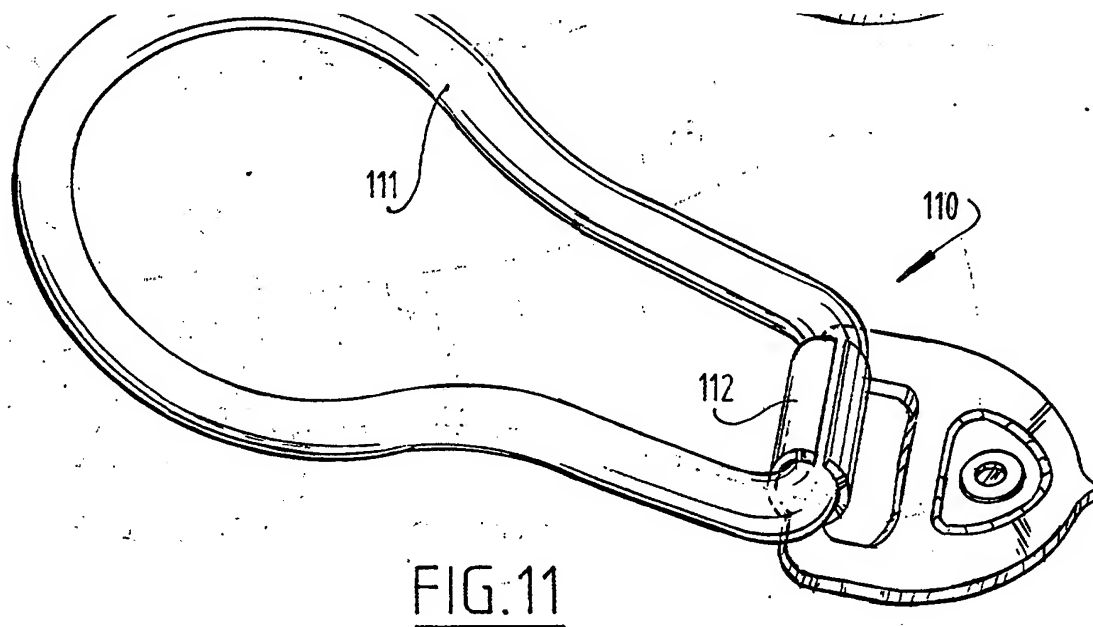
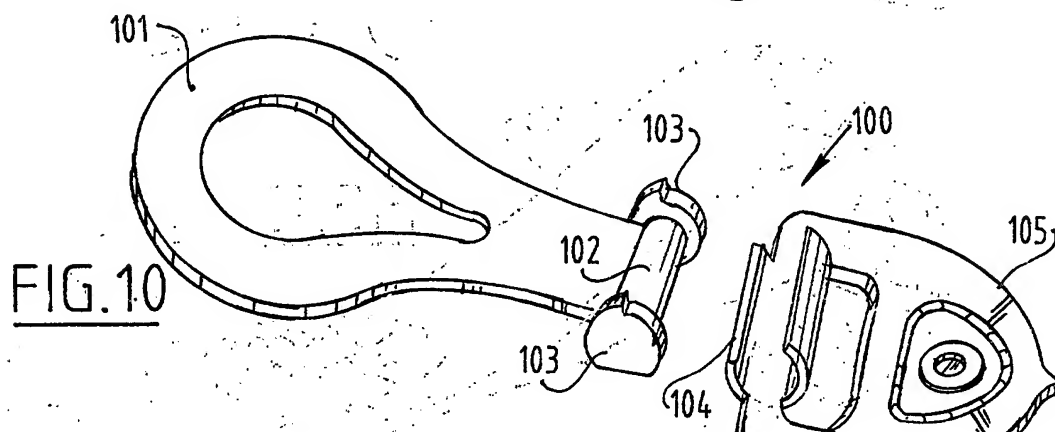
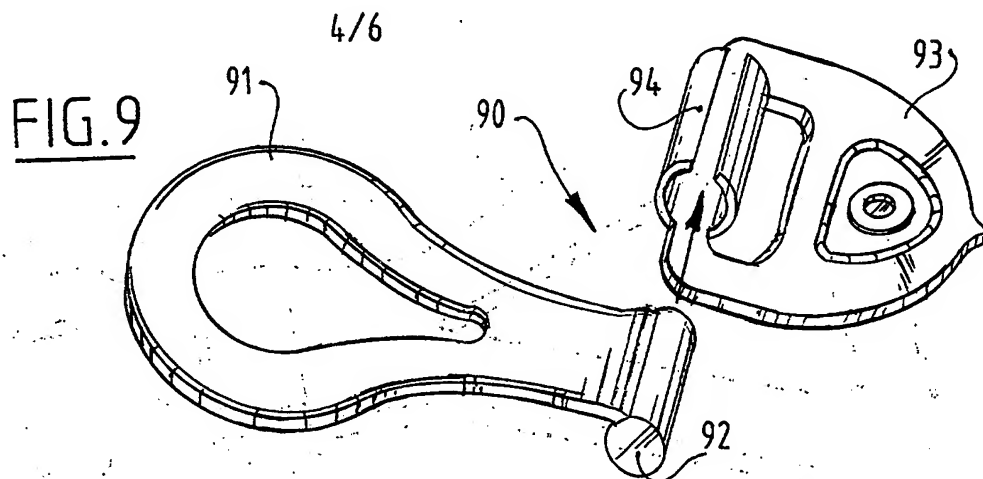


FIG. 7



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